

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the previous amendments and the following discussion is respectfully requested.

Claims 8-20 and 22 remain active in this case. Claims 1-7, 21 and 23-106 have been withdrawn. By this Amendment, Claims 8, 9, 17 and 19 have been amended. Upon allowance of the active claims at least Claim 21 should be reintroduced.

In the outstanding Office Action, Claims 8-20 and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 2000-251768 to Hasegawa in view of Japanese Patent No. 2000-138029 to Koyanagi.

This Amendment is submitted in accordance with 37 C.F.R. § 1.116 which after final rejection permits entering of Amendments. The present Amendment clarifies features already present in the claims. This Amendment does not raise new issues requiring further consideration and/or search. It is therefore respectfully requested that the present amendment be entered under 37 C.F.R. § 1.116.

Applicant respectfully traverses the outstanding ground for rejection because in Applicant's view, the cited prior art fails to teach or obviate the claimed invention.

More particularly, amended Claim 8 defines the subject invention as follows:

8. A method of manufacturing an image display apparatus which comprises an envelope having a front substrate and a rear substrate opposed to each other and individually having peripheral edge portions sealed together, the method comprising:

arranging an electrically conductive sealing member along a sealed portion between the respective peripheral edge portions of the front substrate and the rear substrate; and
sealing the sealed portion by supplying current through the sealing member so as to melt the sealing member by means of the current passing through the sealing member.

As recited in claim 8, current is supplied through the sealing member itself. In other words, current is directed through the sealing member and the sealing member is thereby

heated by I^2R power dissipation, i.e., “Joule” heating occurs, in the sealing member to melt and seal a sealed portion, as described in the specification, page 6, lines 7-23 and page 21, line 20 to page 27, line 8.

In light of the above explanation, it should be understood that the present invention employs direct heating within the sealing member, by virtue of current supplied to the sealing member and the resultant Joule heating thereby produced, whereby melting of the sealing member occurs and sealing is accomplished. This is in distinct contrast to the secondary heat transfer taught by the prior art, as next discussed.

Koyanagi discloses in claim 1, paragraphs [0022] and [0023], FIG. 1, etc., a sealing member (frit glass) 4 is so provided as to overlap with a heating element 5. Current is supplied to the heating element 5 to increase the temperature of the heating element 5. The heating element 5 then transfers heat to the frit glass 4 and melts the frit glass 4 in a sealing operation. Thus, Koyanagi discloses use of a secondary heat transfer mechanism, such as convection, to transfer heat from the heating element 5 to the frit glass 4. Koyanagi does not provide any teaching to supply current to the sealing member itself and thereby heat the frit glass 4. Indeed, as the frit glass 4 cannot be electrified, it would be impossible for Koyanagi to employ power dissipation heating within the frit glass 4 as the heating mechanism, such that not only does Koyanagi not teach or obviate the claimed invention, Koyanagi in fact teaches away from the claimed invention.

Furthermore, Figure 1 of Koyanagi et al. discloses glass face plate 1, a glass rear plate 2, a glass outer frame 3, and frit glass 4 and wiring for heating (a heating element) 5. In Figures 2 and 3 reference numeral 6 indicates a hot plate (a heater). In Koyanagi the heating element, together with the frit glass remains between the face plate and the outer frame after a sealing operation is performed. Thus, the sealed portion of Koyanagi becomes thick and consequently the thickness of the entire display apparatus of Koyanagi is increased.

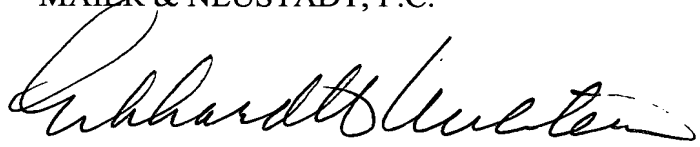
Hasegawa teaches a sealing method in which a sealing material and an adhesive are used together. Hasegawa teaches using indium ("In") for such sealing material. Regarding melting of "In," Hasegawa in paragraph [0022] merely discloses that "In" is heated at a temperature of more than 160°C, thereby being softened and bonded. Hasegawa does not disclose any structure to supply current to "In" to heat and certainly does not teach or suggest power dissipation within the "In" to heat the "In."

Accordingly, in view of the above described deficiencies in the prior art, it is respectfully submitted that the applied prior art, absent hindsight, does not teach or obviate the claimed invention, but on the contrary, in fact teaches away from the claimed invention. Therefore, it is respectfully submitted that the outstanding ground for rejection is traversed. Withdrawal of the outstanding rejection is believed to be in order and is respectfully requested.

Consequently, in view of the above comments, no further issues are believed to be outstanding, and the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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